

WHAT IS CLAIMED IS:

1. A method for obtaining information to access a space in a distributed computing environment, comprising:

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a client sending a space discovery request to obtain an advertisement for a space;

a listener agent receiving the space discovery request from the client; and

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the listener agent sending an indication of one or more space advertisements to the client in response to the discovery request;

wherein each space advertisement comprises information for accessing a corresponding space;

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wherein a space corresponding to one of the space advertisements comprises information for accessing services or content in the distributed computing environment.

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2. The method as recited in claim 1, further comprising:

the client receiving indication of the one or more space advertisements;

the client selecting one of the one or more space advertisements; and

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the client accessing a space corresponding to the selected space advertisement.

3. The method as recited in claim 2, wherein the client accessing a space corresponding to the selected space advertisement comprises using information from the selected space advertisement to send messages to the space corresponding to the selected

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space advertisement, wherein the messages are defined by the selected space advertisement.

4. The method as recited in claim 3, wherein the messages are defined according to a
5 data representation language schema in the selected space advertisement.

5. The method as recited in claim 4, wherein said data representation language schema is an eXtensible Markup Language (XML) schema.

10 6. The method as recited in claim 2, wherein the client accessing a space corresponding to the selected space advertisement comprises the client obtaining from the space a space advertisement for another space in the distributed computing environment.

7. The method as recited in claim 2, wherein the client accessing a space
15 corresponding to the selected space advertisement comprises the client obtaining a service or content advertisement from the space corresponding to the selected space advertisement, wherein said service or content advertisement comprises information for accessing a service or content in the distributed computing environment.

20 8. The method as recited in claim 7, wherein said information for accessing a service or content in the distributed computing environment comprises an address for the service or content and a message schema defining messages for accessing the service or content.

9. The method as recited in claim 1, wherein said information for accessing a
25 corresponding space comprises an address for sending messages to the space to access the space and a data representation language message schema defining said messages in a data representation language.

10. The method as recited on claim 1, wherein the listener agent is independent from
30 the spaces corresponding to the one or more space advertisements the listener agent sends

to the client in response to the space discovery request.

11. The method as recited in claim 1, wherein said indication of one or more space advertisements comprises the one or more space advertisements, wherein each space advertisement comprises an address for sending messages to the space to access the space and a data representation language message schema defining said messages in a data representation language.

12. The method as recited in claim 1, wherein said indication of one or more space advertisements comprises a reference to the one or more space advertisements, wherein each space advertisement comprises an address for sending messages to the space to access the space and a data representation language message schema defining said messages in a data representation language.

13. The method as recited in claim 1, further comprising one or more spaces in the distributed computing system registering themselves with the listener agent, wherein the listener agent responds to the space discovery request with advertisements for one or more of the spaces registered with the listener agent.

14. The method as recited in claim 1, wherein the space discovery request is a message formatted in a data representation language.

15. The method as recited in claim 1, wherein the space discovery request message specifies search criteria for desired spaces.

16. A method for obtaining information to access a space in a distributed computing environment, comprising:

a client accessing a discovery service to obtain an advertisement for a space service;

the discovery service locating one or more space service advertisements; and

5 the discovery service returning an indication of said one or more space service advertisements to the client;

wherein each space service advertisement comprises information for accessing a corresponding space service; and

10 wherein each corresponding space service is configured to provide information for accessing one or more services or content within the distributed computing environment.

17. The method as recited in claim 16, wherein the client accessing a discovery
15 service comprises the client sending a data representation language search message to the discovery service.

18. The method as recited in claim 17, wherein said search message comprises search
20 criteria, and wherein said locating comprises the discovery service locating one or more space service advertisements matching the search criteria.

19. The method as recited in claim 18, wherein the one or more space service
advertisements comprises XML documents, and wherein said locating comprises using an
Internet search engine to find one or more space service advertisements matching the
25 search criteria over the Internet.

20. The method as recited in claim 16, wherein said locating comprises:

the discovery service sending a space discovery request;

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a listener agent receiving the space discovery request; and

the listener agent returning said indication of said one or more space service advertisements in response to the discovery request.

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21. The method as recited on claim 20, wherein the listener agent is independent from the space services corresponding to said one or more space advertisements the listener agent returns an indication of in response to the space discovery request.

10 22. The method as recited in claim 16, further comprising:

the client receiving said indication of said one or more space service advertisements;

15 the client selecting one of said one or more space service advertisements; and

the client accessing a space service corresponding to the selected space service advertisement.

20 23. The method as recited in claim 22, wherein the client accessing a space service corresponding to the selected space advertisement comprises using information from the selected space service advertisement to send messages to the space service, wherein the messages are defined by the selected space service advertisement.

25 24. The method as recited in claim 23, wherein the messages are defined according to a data representation language schema in the selected space advertisement.

25. The method as recited in claim 24, wherein said data representation language schema is an eXtensible Markup Language (XML) schema.

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wherein the listener agent is configured to send an indication of one or more space service advertisements to the client in response to the discovery request;

wherein each space advertisement comprises information for accessing a corresponding one of said one or more space services.

30. The system as recited in claim 29, wherein the client device is configured to:

receive said indication of the one or more space service advertisements;

select one of the one or more space service advertisements; and

access the space service corresponding to the selected space service advertisement.

31. The system as recited in claim 30, wherein the client is configured to use information from the selected space service advertisement construct a message endpoint to send messages to the space service corresponding to the selected space service advertisement, wherein the messages are defined by the selected space service advertisement.

32. The system as recited in claim 31, wherein the messages are defined according to a data representation language schema in the selected space advertisement.

33. The system as recited in claim 32, wherein said data representation language schema is an eXtensible Markup Language (XML) schema.

34. The system as recited in claim 30, wherein the client is configured obtain from the selected space service a space service advertisement for another one of the space services in the distributed computing environment.

35. The system as recited in claim 29, wherein said information for accessing a corresponding one of said one or more space services comprises an address for sending messages to the space service to access the space service and a data representation language message schema defining said messages in a data representation language.

36. The system as recited on claim 29, wherein the listener agent is independent from the one or more space services.

37. The system as recited in claim 29, wherein said indication of one or more space service advertisements comprises the one or more space service advertisements, wherein each space service advertisement comprises an address for sending messages to the space service to access the space service and a data representation language message schema defining said messages in a data representation language.

38. The system as recited in claim 29, wherein said indication of one or more space service advertisements comprises a reference to the one or more space service advertisements, wherein each space service advertisement comprises an address for sending messages to the space service to access the space service and a data representation language message schema defining said messages in a data representation language.

39. The system as recited in claim 29, wherein said one or more devices configured to provide one or more space services are configured to register there space services with said listener agent, and wherein said listener agent is configured to respond to the space discovery request with advertisements for one or more of the spaces service registered with said listener agent.

40. A system for obtaining information to access a space in a distributed computing environment, comprising:

a client device configured to access a discovery service to obtain an advertisement for a space service;

5 a device configured to provide the discovery service, wherein the discovery service is configured to locate one or more space service advertisements; and

10 wherein the discovery service is configured to return an indication of said one or more space service advertisements to the client device;

wherein each space service advertisement comprises information for accessing a corresponding space service; and

15 wherein each corresponding space service is configured to provide information for accessing one or more services or content within the distributed computing environment.

20 41. The system as recited in claim 40, wherein the client device is configured to access the discovery service by sending a data representation language search message to the discovery service.

25 42. The system as recited in claim 41, wherein said search message comprises search criteria, and wherein the discovery service is configured to locate one or more space service advertisements matching the search criteria.

30 43. The system as recited in claim 42, wherein the one or more space service advertisements comprises XML documents, and wherein the discovery service is configured to use an Internet search engine to find one or more space service advertisements matching the search criteria over the Internet.



44. The system as recited in claim 40, wherein the discovery service is configured to locate the one or more space service advertisements by send a space discovery request, wherein the system further comprises a listener agent configured to receive the space
5 discovery request and return said indication of said one or more space service advertisements in response to the discovery request.

45. The system as recited on claim 44, wherein the listener agent is independent from the space services corresponding to said one or more space advertisements the listener
10 agent returns an indication of in response to the space discovery request.

46. The system as recited in claim 40, wherein the client is configured to:

receive said indication of said one or more space service advertisements;
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select one of said one or more space service advertisements; and

access a space service corresponding to the selected space service advertisement.

20 47. The system as recited in claim 46, wherein the client is configured to access a space service corresponding to the selected space advertisement by using information from the selected space service advertisement to send messages to the space service, wherein the messages are defined by the selected space service advertisement.

25 48. The system as recited in claim 47, wherein the messages are defined according to a data representation language schema in the selected space advertisement.

49. The system as recited in claim 48, wherein said data representation language schema is an eXtensible Markup Language (XML) schema.

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096967-10700
DD/ET/16/96960

